

REMARKS

The Office Action of October 9, 2007 was received and reviewed. The Examiner is thanked for reviewing this application. Reconsideration and withdrawal of the currently pending rejections are requested for the reasons advanced in detail below.

Claims 1-7, 10, 11, 14-21, 23, 24, 27 and 28 are pending in the instant application, of which claims 1-6, 10, 11, 14 and 15 are independent. By this Amendment, claims 1-6, 10, 11, 14, 15, 17, 18, 20, 21, 27 and 28 have been amended and claim 7 has been canceled without prejudice or disclaimer. Consequently, claims 1-6, 10, 11, 14-21, 23, 24, 27 and 28 are pending.

Referring now to the detailed Office Action, claim 16 is objected to as being substantially claim 7. In response, Applicants have canceled claim 7 as shown in the above amendment and therefore respectfully request that this objection be removed.

Additionally, claims 1-7, 14-21, 27 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. Pub. 2002/0022364 to Hatta et al. (Hatta) in view of U.S. Patent No. 6,871,943 to Ogawa (Ogawa '943) and U.S. Patent No. 5,549,780 to Koinuma et al. (Koinuma) and claims 10, 11, 23 and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,228,465 to Takiguchi et al. (Takiguchi) in view of U.S. Patent No. 6,231,917 to Ogawa et al. (Ogawa '917). These rejections are respectfully traversed at least for the reasons provided below.

In the interest of expediting the allowance of this application, Applicants have ended independent claims 1-6, 10, 11, 14 and 15 as shown above, to further distinguish the presently claimed invention over the various combinations of Hatta, Ogawa '943, Koinuma,

Takiguchi and/or Ogawa '917.

Claims 1-7, 14-21, 27 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. Pub. 2002/0022364 to Hatta et al. (Hatta) in view of U.S. Patent No. 6,871,943 to Ogawa (Ogawa '943) and U.S. Patent No. 5,549,780 to Koinuma et al. (Koinuma). Hatta, taken in combination with Ogawa '943 and Koinuma, however, fails to render the claimed invention unpatentable. Each of the claims recite a specific combination of features that distinguishes the invention from the prior art in different ways. For example, independent claims 1 and 4 each recite a combination that includes, among other things:

selectively forming a pattern comprising a composition which is emitted by use of droplet emitting means over a substrate having a size of $1000 \times 1200 \text{ mm}^2$ or larger ... comprises plasma generating means under 5 Torr to 800 Torr,

(see, for example, page 3, lines 9-11; page 3, line 24 to page 4, line 10; and page 23, line 17 of specification).

It should be noted that in using a large-sized substrate, a photolithography process, which has been employed conventionally, causes a large amount of material to be wasted. In the present invention, selective formation by use of a droplet emitting means is adopted, which allows for a significant reduction in the amount of material waste.

Independent claims 2, 3, 5, 6, 14 and 15 each recite yet another combination that includes, *inter alia*,

forming a transistor over a substrate having a size of $1000 \times 1200 \text{ mm}^2$ or larger, the transistor comprising a gate electrode, a gate insulating film, and a semiconductor layer that has a source region, a drain region, and a channel region; and forming a pixel electrode that is electrically connected to one of the source region and the drain region, wherein the gate electrode is formed by: selectively forming a pattern including a metal material by use of droplet emitting means ... comprises plasma generating means 5 Torr to 800 Torr,

(see, for example, FIGS. 15A to 19 and the description of embodiment 2 in the specification).

Claims 10, 11, 23 and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,228,465 to Takiguchi et al. (Takiguchi) in view of U.S. Patent No. 6,231,917 to Ogawa et al. (Ogawa '917). Takiguchi, taken in combination with Ogawa '917, however, fails to render the claimed invention unpatentable. Each of the claims recite a specific combination of features that distinguishes the invention from the prior art in different ways. For example, independent claims 10 and 11 each recite a combination that includes, among other things:

forming a groove in an insulating film formed on a glass substrate
having a size of $1000 \times 1200 \text{ mm}^2$ or larger,

(see, for example, page 3, lines 9-11 and page 23, line 17 of specification).

The Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. *MPEP* §2142. To establish a *prima facie* case of obviousness, three criteria must be met. First, there must be some suggestion or motivation, to modify the references or to combine reference teachings. Second, there must be reasonable expectation of success. Finally, the prior art must teach all the claim limitations. *MPEP* §2142. The combined references do not teach or suggest all the claim limitations of the present application.

Applicants respectfully point to the final prong of the test, which states the prior art must teach all the claim limitations. At the very least, the combined references do not teach all of the limitations of independent claims 1-6, 10, 11, 14 and 15.

With respect to independent claims 1-6, 14 and 15, the Examiner asserts that Hatta discloses a manufacturing method of a display device (FIGS. 1-5) comprising: selectively forming a resist pattern 30 comprising a composition which is emitted by use of droplet

emitting means (a spin coater); baking the resist pattern 30; carrying out plasma processing to the baked emitting means comprises an inherent droplet emitting head for dispensing the resist composition.

The Examiner attempts to remedy the deficiencies of Hatta by turning to Ogawa '943. The Examiner asserts that Ogawa '943 shows in FIG. 13 a droplet emitting head 7 comprising a plurality of droplet emitting holes ("ejection nozzles") 138 disposed in a line form, wherein the droplet emitting head 7 is used for selectively forming metal wiring and resist patterns (see col. 18, ll. 14-53; col. 7, line 65 to col. 8, line 5; col. 8, ll. 15-22; and col. 31, ll. 18-32 and 43-53).

The Examiner further attempts to remedy the deficiencies of Hatta in combination with Ogawa '943 by turning to Koinuma. The Examiner asserts that Koinuma teaches that etching at atmospheric pressure adds the capability of etching a large area in an open system and does not require the evacuation of a chamber (see col. 3, ll. 29-36 and col. 4, ll. 34-42). However, the combination of Hatta with Ogawa '943 and Koinuma does not disclose or suggest the features of "selectively forming a pattern comprising a composition which is emitted by use of droplet emitting means over a substrate having a size of $1000 \times 1200 \text{ mm}^2$ or larger ... comprises plasma generating means under 5 Torr to 800 Torr" and "forming a transistor over a substrate having a size of $1000 \times 1200 \text{ mm}^2$ or larger, the transistor comprising a gate electrode, a gate insulating film, and a semiconductor layer that has a source region, a drain region, and a channel region; and forming a pixel electrode that is electrically connected to one of the source region and the drain region, wherein the gate electrode is formed by: selectively forming a pattern including a metal material by use of droplet emitting means ... comprises plasma generating means 5 Torr to 800 Torr," as presently claimed.

In accordance with the M.P.E.P. § 2143.03, to establish a *prima facie* case of obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 196 (CCPA 1970). Therefore, it is respectfully submitted that neither Hatta, Ogawa ‘943 nor Koinuma, taken alone or in any proper combination, discloses or suggests the subject matter as recited in amended independent claims 1-6, 14 and 15. Hence, withdrawal of the rejection is respectfully requested.

With respect to independent claims 10 and 11, the Examiner asserts that Takiguchi discloses in FIGS. 5A-5C a manufacturing method of a display device comprising: forming a groove 8 in an insulating film 3 formed on a glass substrate 1; emitting a wiring material in the groove 8 by plating or burying to form a wiring 7 in the groove.

The Examiner attempts to remedy the deficiencies of Takiguchi by turning to Ogawa ‘917. The Examiner asserts that Ogawa ‘917 shows in FIGS. 6, 15-19 and 34-47 using a droplet emitting means to emit a composition (*e.g.*, SOG, resist or metal), wherein the droplet emitting means comprises a droplet emitting head 20 in which a plurality of droplet emitting holes 11 are disposed in a line form, wherein the droplet emitting head 20 moves along a groove (“depressed portion”) when emitting the wiring material for the purpose of forming a film having a flat surface (see col. 20, ll. 48-54). However, the combination of Takiguchi with Ogawa ‘917 does not disclose or suggest the features of “forming a groove in an insulating film formed on a glass substrate having a size of $1000 \times 1200 \text{ mm}^2$ or larger,” as presently claimed. Thus, it cannot be said that Takiguchi, taken in combination with Ogawa ‘917, makes obvious the present invention, as claimed.

Each of the rejected dependent claims depend from one of independent claims 1-6,

10, 11, 14 or 15 and are patentable over the cited prior art for at least the same reasons as set forth above with respect to claims 1-6, 10, 11, 14 and 15.

In addition, each of the dependent claims also recite combinations that are separately patentable.

In view of the foregoing, it is respectfully requested that the rejections of record be reconsidered and withdrawn by the Examiner, that claims 1-6, 10, 11, 14-21, 23, 24, 27 and 28 be allowed, and that the application be passed to issue. If a conference would expedite prosecution of the instant application, the Examiner is hereby invited to telephone the undersigned to arrange such a conference.

Respectfully submitted,

/Sean A. Pryor, Reg. #48103/
Sean A. Pryor

NIXON PEABODY LLP
CUSTOMER NO.: 22204
Suite 900, 401 9th Street, N.W.
Washington, D.C. 20004-2128
(202) 585-8000